

TO: Kristy Martinez, Planning Department

FROM: Brandy Williams, Engineering Department

DATE: 5/7/20 (Engineering Received - 3/17/20)

SUBJECT: Aspen Ranch – Preliminary/Final Drainage Report SUBMITTAL #: 1

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### **Engineering Division**

The City of Fountain Engineering Department reviews plans and reports to ensure general conformance with the adopted standards and criteria. The engineering consultant is responsible for compliance with all applicable criteria, including other governmental regulations. Notwithstanding anything depicted in the plan in words or graphic representation, all design and construction related to roads, storm drainage, and erosion control shall conform to the standards and requirements of the most recent version of the relevant adopted criteria the City of Colorado Springs Drainage Criteria Manual, and the Drainage Criteria Manual Volume 2. Any modifications necessary to meet overlooked criteria after-the-fact will be the developer's responsibility to rectify.

The following are Engineering Department comments regarding the submitted documents for the subject application. A written response to all comments is required for review of the re-submittal. Additional comments may be generated on items added or altered after the original comments.

### Drainage Report

1. Refer to the attached drainage report check list for additional comments. **Affirmative**
2. An IRF (Imperviousness Reduction Factor) Spreadsheet (see Urban Drainage and Flood Control (UDFCD) is required to determine the percentage of imperviousness for the pond design. **Done**
3. Revise all street capacity calculations based on the revised street cross-sections. **Done**
4. In the proposed drainage narrative, reference and compare your updated flow values against the MDDP. **Done**
5. Provide documentation from the owner of the bank property that grants permission to construct the drainage swale on their property. **A drainage easement is being pursued to allow conveyance through this property.**
6. Quantify/route/mitigate surface and sub-surface flows in the southeast corner of the site coming from the Michael K & Joan Highland McNiece property. This area is to be analyzed and mitigated as directed by City Council. This is also a geotechnical report comment given to the Geotechnical Engineer to analyze this location. **An investigation of this item is in progress. Preliminary information from the first month with an FMIC irrigation water release event has been included. This initial information suggests that the FMIC irrigation releases drive the shallow water table at the south end of the site. The initial information also suggests that by providing a storm sewer bypass for the site and alleviating the ponding of water in the existing detention pond excavation, the development may mitigate much of or, at the very least, slow the increase to the water table.**
7. The rear lots of Basin B-4 and portions of basin B-11 should be routed to the park as indicated by the lot grading shown. **These items will be corrected.**

8. Portions of basin B-13 appear to develop runoff that enters the site. Either take this into account for your site or redirect as necessary. **A swale will be constructed along this boundary to intercept this runoff prior to their entering the Aspen Ranch development.**
9. The rear portion of the lots of Castlebra should be included in basin B-5. **This appears to be the case as it is currently modeled.**
10. The front of the lots along Frasco Drive should be a part of basin B-2c. **This appears to refer to the north side of Frasco Drive. I believe that the basin is delineated correctly. These flows will run off the front of the lot and will flow west along Frasco then around the corner to Cronin which will convey the flows north to Design Point 13 in basin B-2b.**
11. Using 2 triple type C inlets at the southeast corner of Link and Kane is not acceptable. This structure will need to be specially designed to capture all runoff and ensure ponding will not exceed what exists today. If this is not possible, then permission from the owner is required. **We have removed the type C inlets and instead propose a 36-inch pipe with a custom end section to capture flows without encroaching on the neighboring property.**
12. Discuss the forebay, trickle channel, micropool, orifice hole sizes, spillway design and improvements in the “Detention” section of the report. **A description of these items has been added to the pond information summary in the report document.**
13. Provide hydraulic grade lines for all storm sewer. **The HGLs will be provided as an addendum to the PDR/FDR which will be submitted along with the storm sewer construction drawings.**
14. Definitively qualify and quantify why you are not treating proposed portions of Kane and Link roads. In our MS4 permit, there are allowances for reconstructed roadway improvements with regard to treatment. They are based on several factors in the MS4 document. **See Exclusions section added to the Water Quality section of the report. The vast majority of new paved surfaces are treated by the proposed detention pond. A small strip along Kane will be excluded from treatment per section E.4.a.i.(A) of the General MS4 permit because this portion of the project involves reconstruction of existing pavement. Another small area tributary to Design Point 22 will continue to be treated in downstream detention constructed in a different development.**
15. Add labels on the map and text in the report to indicate that all storm drainage facilities will be privately owned and maintained. **The FMIC Bypass pipe has been marked as private from the starting point to the manhole where it ties into flows from across Kane Road. A note has been added indicating that this stretch of storm sewer as well as the proposed detention pond will be privately owned and maintained. All other storm sewer will be owned and maintained by the City.**
16. In the proposed drainage narrative, describe all overflow tract capacities, structure restrictions, etc. and provide calculations to support the design. **Overflow path descriptions have been added to section III. C.**
17. Provide FMIC documentation stating the proposed design and analysis in this report is acceptable. **A letter from the FMIC indicating “no exceptions taken” regarding the proposed design has been included in Appendix C. The text of the FMIC letter included in the City comments on the March 2020 submittal has also been included.**

#### Miscellaneous Comments

**These items will be submitted with the construction drawings.**

1. Provide a Stormwater Management Plan.
2. Provide an Inspection and Maintenance Plan for the pond facility. See attached for City of Fountain template.

3. Provide a Private Detention Pond Maintenance Agreement using the City of Fountain template see attached.